REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Claims 1 and 7-12 remain in the application. Claims 2-6 have been cancelled previously. This response includes no amendments to the claims.

Claims 1 and 7-12 stand rejected under 35 U.S.C. §112, first paragraph as failing to meet the written description requirement. Specifically, the Examiner states that the feature "one baffle-free combined process space" recited in claim 1 is not supported by the specification. Applicant respectfully disagrees. This feature is clearly illustrated in Fig. 2 of the specification. The Examiner refers to Fig. 3 as showing a contrary arrangement. However, Fig. 3 represents an alternate embodiment of the invention from Fig. 2. Thus, Figs. 2 and 3 are not inconsistent with each other. Fig. 2 in comparison to Fig. 3 shows that the wall members 20 between the magnetron electrodes are only one option if one desires to confine the plasma and process gas to the space between each one of the magnetron electrodes and the drum. Paragraph 21 of Applicant's Specification states that there is a gap between neighboring magnetron faces: "It is possible to leave e.g. every second gap between two neighboring magnetron faces without a gas supply line such that the gas is removed through these gaps also." This passage in connection with Fig. 2 clearly discloses that there are no baffles in this embodiment of the invention. If there were, no removal of gas through the empty gap would be

possible. This statement negates an assumption that baffles are omitted from Fig. 2 just for reasons of simplicity.

Applicant requests clarification of the Examiner's statements regarding claim 8. The Examiner has cited a portion of the specification that supports the features described in claim 8.

Claims 1 and 7-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 5,879,519 to Seeser et al (hereinafter Seeser) in view of U.S. 3,884,787 to Kuehnle (hereinafter Kuehnle) and further in view of U.S. 6,306,265 to Fu et al. (hereinafter Fu). For the following reasons, the Examiner's rejection is traversed.

The Seeser reference does not teach that for which it has been cited. The Examiner has misinterpreted parts of the Seeser reference, namely: 1) that Seeser teaches a *single step process* with one baffle-free combined process space, when Seeser in fact only teaches multiple step processes; 2) that Seeser teaches *magnetron faces and gas supply lines arranged side by side* to form a combined process space with a part of the circumferential surface of a drum, when in fact Seeser does not teach this; and 3) that Seeser teaches that all *gas supply lines are connected to a source of only one process gas* mixture, when in fact, Seeser does not teach this. Applicant believes the Examiner has used hindsight, in view of Applicant's invention to interpret the figures of Seeser, instead of relying on the Specification of Seeser and the state of the art at the time of the Seeser patent.

1) Single Step Process - One Baffle-Free combined process space

Seeser teaches only a multiple step coating process by means of reactive sputtering, meaning that in a first step, a material is deposited onto the film, and in a second step this material is brought to a chemical reaction, in particular oxidation.

The disclosure of Seeser can be difficult to navigate, because so many embodiments are disclosed, but all embodiments of Seeser comprise multiple step processes. This is evidenced by the fact that Seeser does not teach or suggest a baffle free combined process space. Instead, each step of Seeser is performed in a separate process space.

Referring to the text of Seeser, the Abstract states:

> A thin film coating system incorporates separate, separately-controlled deposition and reaction zones for depositing materials such as refractory metals and forming oxides and other compounds and alloys of such materials. The associated process involves rotating or translating workpieces past the differentially pumped, atmospherically separated, sequentially or simultaneously operated deposition and reaction zones…

Further, the "Summary of the Invention" portion of Seeser's specification first describes "Characteristics of Deposition and Reaction Zones". This summary section describes how the deposition and reaction zones are physically separate. Further, in the summary section a "Present System and Method of Operation" is described in a way such that the substrate moves past a set of processing stations and describes "the chemical reaction devices and "the deposition devices", meaning that both are always present.

Thus, in Seeser, there are always separate reaction zones and deposition zones.

Evidencing this in greater detail is the disclosure of Seeser, again from the Summary of the Invention portion of the specification. Seeser states at col. 2, lines 56-60:

> the reaction is effected by means of a highly intense plasma in a highly efficient manner at high gas pressures in a long narrow zone, isolated physically from the metal deposition zone by a region of relatively low

pressure.

Also column 4, lines 6-8 states:

"long narrow zones for both deposition and reaction with complete physical separation of the zone boundaries"

Column 4, lines 8-14 mention that metal deposition is made at relatively low pressure, while reaction is made at high pressure.

All of these statements point to one conclusion, that Seeser does not teach one combined process space. Rather, physical isolation between the deposition and reaction zones is a mandatory feature of the Seeser invention and present in all embodiments, even if not specifically shown in detail in all of the Figures.

No part of Seeser, including Figs. 15 and 16 cited by the Examiner, teach one baffle-free combined space, as required by the claims. Rather "physical separation" or "pressure separation" in the context of the Seeser disclosure requires that baffles confine at least the active zone of either the deposition or the reaction device in Seeser.

This fact is illustrated by reviewing the specific embodiments disclosed by Seeser.

Figs. 4 and 5 show a DC magnetron sputtering device 30 that can be used as a deposition station 26, 27 or reaction station 28, e.g. in an embodiment as shown in Figs. 1-3. This device 30 comprises a housing which forms a gas baffle 32. “The baffles 32 in the individual sputter devices 30 effectively divide the overall processing chamber 10, in Figs. 1 and 2, into different regions or sub-chambers at each sputterer in which different gas atmospheres and/or gas partial pressures can be established” (col. 7, l. 62-66). Also, other parts of the description of Figs. 4 and 5

refer to "baffle-separated magnetron cathodes" (col. 8, l.18-28).

Figs. 6 and 7 of Seeser show an inverse linear magnetron-type of ion source 40 which can be used as a reaction station 28. This device also has baffles 32 as shown in Figs. 4 and 5. For clarity reasons, these are not shown in Figs. 6 and 7, as explicitly stated in col. 8, l. 49-50 of Seeser. A narrow, localized reaction zone is thus established (col. 9, l. 47-49).

Figs. 32-35 of Seeser show further embodiments of the deposition device that are not magnetrons. Here again, the space in front of the ion source is baffled (reference numerals 203, 223).

Baffles are also shown in most of the figures of Seeser that depict the whole coating setup, e.g. in Figs. 1, 2, 8, 9, 15, 22, 28, 32-36, 38. In particular, in Fig. 15, all devices 26-28 are baffled, and the respective deposition and reaction zones are confined to the area between each element 26-28 and the surface of the drum. **There is no combined process space for all devices 26-28 in Fig. 15 of Seeser, but the process spaces are physically separated from one another.**

The other figures that do not show baffles either do not show the deposition/reaction devices at all or show these devices only purely schematically. However, as discussed above, the baffles must be there for proper function, even if not explicitly shown. One of ordinary skill in the art learns from the description (in particular col. 8, l.3-13) that, independent of the type of station used, it is mandatory to enclose the deposition device and the reaction device in distinct partial pressure regimes or chamber regions. Any omission of the baffles is just to simplify the drawings.

In particular, Fig. 16 illustrates only an alternative in the drive mechanism of

the web, i.e. the film supply, idler and feed rollers, drum and supply reel. This is why the details of the magnetrons (stations 26-28), that have been explained in other parts of the description of Seeser, are not repeated in connection with Fig. 16. Only the position of the stations 26-28 is indicated with the boxes in Fig. 16 (according to col. 7, l. 19-20, the reference numerals 26-28 do not necessarily indicate the device as such but may also refer only to the station, i.e. the intended position of the device).

Thus, interpreting Seeser in view of all of its disclosure, the reference fails to teach or suggest a baffle-free combined process space as required. Kuehnle and Fu fail to cure this deficiency in Seeser.

2) Magnetron Faces and Gas Supply Lines Arranged Side by Side

In Seeser, the stations 26-28 are at a distance from one another, as required for the multiple-step process and the physical separation of the deposition and the reaction zones. See for example Figs. 1, 2, 8, 9, 10, 11, 12, 14-16 of Seeser, where there is a distance between the stations 26-28 that exceeds the width of the respective station by far.

Seeser does not show that the magnetron faces and the gas supply lines are arranged **side by side**, to form a quasi continuous surface confining one common process space, as required by the claims.

Kuehnle and Fu fail to cure this deficiency in Seeser.

3) *All Gas Supply Lines are Connected to a Source of Only One Process Gas*

As discussed above, Seeser discloses only an at least two-step process.

Apart from the physical separation of the reaction and deposition zones, this implies that at least two different stations 26-28 and more than one process gas are used, i.e. one for depositing a material, and the other one for the subsequent chemical reaction (normally oxidation).

In Figs. 15 and 16 of Seeser, no details of the gas supply are shown. Not even a gas supply itself is shown. This is not surprising, because these figures show only an alternative of the drive mechanism, and the other parts of the system have been explained before. There is also no description of the gas supply in connection with Figs. 15 and 16.

It is not correct that Fig. 16 indicates that any one of the stations 26-28 can be used in all stations, as stated by the Examiner. Fig. 16 is a simplified drawing of only the drive mechanism. Reference numerals 26-28 indicate only positions of the deposition/reaction devices. It does not mean that there can be three identical stations 26, or three identical stations 27 or three identical stations 28, but that the order of the stations 26-28 along the circumference of the drum can be chosen according to the actual requirements. The same applies to Figs. 10, 11, 14, 28 of Seeser, for example, where also the mechanics are shown and details of the stations 26-28 are omitted.

Therefore, Fig. 16 cannot be interpreted in such a way that one and the same type of station is used threefold. The device shown is still for a multiple-step process, meaning that the stations 26-28 are operated differently and that different gases have to be supplied to these stations.

Thus, Seeser does not disclose that **all gas supply lines are connected to a source of only one process gas mixture**.

Kuehnle and Fu fail to cure this deficiency in Seeser.

Additionally, Seeser does not teach or suggest that each magnetron has its own power supply unit. Fig. 37A shows **purely schematically** only one magnetron 40A without showing the whole setup with several magnetrons. A power supply unit 241 connected to the magnetron 40A is shown. There is no disclosure how the whole system comprising several magnetrons looks like. Consequently, Seeser does not disclose that each magnetron has its **own power supply unit**.

Kuehnle and Fu fail to cure this deficiency in Seeser.

Reconsideration and withdrawal of the rejection of independent claim 1, and claims 7-12 which depend directly or indirectly therefrom, under 35 U.S.C. §103(a) is respectfully requested. Restating the arguments made above, Seeser fails to teach or suggest a single step process within one baffle-free combined process space, as required. Seeser also fails to teach magnetron faces and gas supply lines arranged side by side to form a combined process space with a part of the circumferential surface of a drum. Seeser also fails to teach that all *gas supply lines are connected to a source of only one process gas* mixture, as required. Additionally, Seeser fails to teach or suggest each magnetron havin its own power supply unit, as required. Kuehnle and Fu fail to cure these deficiencies in Seeser. In conclusion, Applicant believes the Examiner has used hindsight, in view of Applicant's invention to interpret the figures of Seeser, instead of relying on the Specification of Seeser and the state of the art at the time of the Seeser patent.

In light of the foregoing, it is respectfully submitted that the present application

is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. FRR-16006.

Respectfully submitted,

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